

SEQUENCE LISTING

<110> Estell, David A.  
Harding, Fiona A.

<120> PROTEINS PRODUCING AN ALTERED IMMUNOGENIC RESPONSE AND  
METHODS OF MAKING AND USING THE SAME

<130> A-68893/DJB/DAV

<140> US 09/500,135

<141> 2000-02-08

<150> US 09/060,872

<151> 1998-04-15

<160> 236

<170> PatentIn Ver. 2.1

<210> 1

<211> 1495

<212> DNA

<213> Bacillus amyloliquefaciens

<220>

<221> mat\_peptide

<222> (417)..(1495)

<220>

<221> CDS

<222> (96)..(1244)

<220>

<221> misc\_feature

<222> (582)..(584)

<223> The nnn at positions 582 through 584 which in a  
preferred embodiment (aat) is to code for  
asparagine, but which may also code for proline.

<220>

<221> misc\_feature

<222> (585)..(587)

<223> The nnn at positions 585 through 587 which in a  
preferred embodiment (cct) is to code for proline,  
but which may also code for asparagine.

<220>

<221> misc\_feature

<222> (597)..(599)

<223> The nnn at positions 597 to 599 which in a  
preferred embodiment (aac) is to code for  
asparagine, but which may also code for aspartic acid.

<220>

<221> misc\_feature

<222> (678)..(680)

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<223> The nnn at positions 678 through 680 which in a preferred embodiment (gca) is to code for alanine, but which may also code for serine.

<220>

<221> misc\_feature

<222> (681)..(683)

<223> The nnn at positions 681 through 683 which in a preferred embodiment (tca) is to code for serine, but which may also code for alanine.

<220>

<221> misc\_feature

<222> (708)..(710)

<223> The nnn at positions 708 through 710 which in a preferred embodiment (gct) is to code for alanine, but which may also code for aspartic acid.

<220>

<221> misc\_feature

<222> (711)..(713)

<223> The nnn at positions 711 through 713 which in a preferred embodiment (gac) is to code for aspartic acid, but which may also code for alanine.

<220>

<221> misc\_feature

<222> (888)..(890)

<223> The nnn at positions 888 through 890 which in a preferred embodiment (act) is to code for threonine, but which may also code for serine.

<220>

<221> misc\_feature

<222> (891)..(893)

<223> The nnn at positions 891 through 893 which in a preferred embodiment (tcc) is to code for serine, but which may also code for threonine.

<220>

<221> misc\_feature

<222> (1167)..(1169)

<223> The nnn at positions 1167 through 1169 which in a preferred embodiment (gaa) is to code for glutamic acid, but which may also code for glutamine.

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ttattctgca aatgaaaaaa aggagaggat aaaga atg aga ggc aaa aaa gta 113  
Met Arg Gly Lys Lys Val  
-105

tgg atc agt ttg ctg ttt gct tta gcg tta atc ttt acg atg gcg ttc 161  
Trp Ile Ser Leu Leu Phe Ala Leu Ala Leu Ile Phe Thr Met Ala Phe  
-100 -95 -90

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Gly Ser Thr Ser Ser Ala Gln Ala Ala Gly Lys Ser Asn Gly Glu Lys	
-85 -80 -75 -70	
aaa tat att gtc ggg ttt aaa cag aca atg agc acg atg agc gcc gct	257
Lys Tyr Ile Val Gly Phe Lys Gln Thr Met Ser Thr Met Ser Ala Ala	
-65 -60 -55	
aag aag aaa gat gtc att tct gaa aaa ggc ggg aaa gtg caa aag caa	305
Lys Lys Lys Asp Val Ile Ser Glu Lys Gly Lys Val Gln Lys Gln	
-50 -45 -40	
ttc aaa tat gta gac gca gct tca gct aca tta aac gaa aaa gct gta	353
Phe Lys Tyr Val Asp Ala Ala Ser Ala Thr Leu Asn Glu Lys Ala Val	
-35 -30 -25	
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Lys Glu Leu Lys Lys Asp Pro Ser Val Ala Tyr Val Glu Glu Asp His	
-20 -15 -10	
gta gca cat gcg tac gcg cag tcc gtg cct tac ggc gta tca caa att	449
Val Ala His Ala Tyr Ala Gln Ser Val Pro Tyr Gly Val Ser Gln Ile	
-5 -1 1 5 10	
aaa gcc cct gct ctg cac tct caa ggc tac act gga tca aat gtt aaa	497
Lys Ala Pro Ala Leu His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys	
15 20 25	
gta gcg gtt atc gac agc ggt atc gat tct tct cat cct gat tta aag	545
Val Ala Val Ile Asp Ser Gly Ile Asp Ser Ser His Pro Asp Leu Lys	
30 35 40	
gta gca ggc gga gcc agc atg gtt cct tct gaa aca nnn nnn ttc caa	593
Val Ala Gly Gly Ala Ser Met Val Pro Ser Glu Thr Xaa Xaa Phe Gln	
45 50 55	
gac nnn aac tct cac gga act cac gtt gcc ggc aca gtt gcg gct ctt	641
Asp Xaa Asn Ser His Gly Thr His Val Ala Gly Thr Val Ala Ala Leu	
60 65 70 75	
aat aac tca atc ggt gta tta ggc gtt gcg cca agc nnn nnn ctt tac	689
Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Xaa Xaa Leu Tyr	
80 85 90	
gct gta aaa gtt ctc ggt nnn nnn ggt tcc ggc caa tac agc tgg atc	737
Ala Val Lys Val Leu Gly Xaa Xaa Gly Ser Gly Gln Tyr Ser Trp Ile	
95 100 105	
att aac gga atc gag tgg gcg atc gca aac aat atg gac gtt att aac	785
Ile Asn Gly Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn	
110 115 120	
atg agc ctc ggc gga cct tct ggt tct gct gct tta aaa gcg gca gtt	833
Met Ser Leu Gly Gly Pro Ser Gly Ser Ala Ala Leu Lys Ala Ala Val	
125 130 135	
gat aaa gcc gtt gca tcc ggc gtc gta gtc gtt gcg gca gcc ggt aac	881

Asp Lys Ala Val Ala Ser Gly Val Val Val Val Ala Ala Ala Gly Asn  
 140 145 150 155  
 gaa ggc nnn nnn ggc agc tca agc aca gtg ggc tac cct ggt aaa tac 929  
 Glu Gly Xaa Xaa Gly Ser Ser Ser Thr Val Gly Tyr Pro Gly Lys Tyr  
 160 165 170  
 cct tct gtc att gca gta ggc gct gtt gac agc agc aac caa aga gca 977  
 Pro Ser Val Ile Ala Val Gly Ala Val Asp Ser Ser Asn Gln Arg Ala  
 175 180 185  
 tct ttc tca agc gta gga cct gag ctt gat gtc atg gca cct ggc gta 1025  
 Ser Phe Ser Ser Val Gly Pro Glu Leu Asp Val Met Ala Pro Gly Val  
 190 195 200  
 tct atc caa agc acg ctt cct gga aac aaa tac ggg gcg tac aac ggt 1073  
 Ser Ile Gln Ser Thr Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly  
 205 210 215  
 acg tca atg gca tct ccg cac gtt gcc gga gcg gct gct ttg att ctt 1121  
 Thr Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu  
 220 225 230 235  
 tct aag cac ccg aac tgg aca aac act caa gtc cgc agc agt tta nnn 1169  
 Ser Lys His Pro Asn Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Xaa  
 240 245 250  
 aac acc act aca aaa ctt ggt gat tct ttc tac tat gga aaa ggg ctg 1217  
 Asn Thr Thr Thr Lys Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu  
 255 260 265  
 atc aac gta cag gcg gca gct cag taa aacataaaaa accggccttg 1264  
 Ile Asn Val Gln Ala Ala Ala Gln  
 270 275  
 gccccgccgg tttttttatt tttcttctc cgcatgttca atccgctcca taatcgacgg 1324  
 atggctccct ctgaaaattt taacgagaaa cggcgggttg acccggctca gtcccgtaac 1384  
 ggccaagtcc tgaaacgtct caatcgccgc ttcccggttt ccggtcagct caatgccgta 1444  
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&lt;210&gt; 2

&lt;211&gt; 382

&lt;212&gt; PRT

&lt;213&gt; Bacillus amyloliquefaciens

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (163)...(163)

&lt;223&gt; Xaa = Asn or Pro

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (164)...(164)

<223> Xaa = Pro or Asn

<220>

<221> VARIANT

<222> (168)...(168)

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<222> (265)...(265)

<223> Xaa = Thr or Ser

<220>

<221> VARIANT

<222> (266)...(266)

<223> Xaa = Ser or Thr

<220>

<221> VARIANT

<222> (358)...(358)

<223> Xaa = Gln or Glu

<400> 2

Met Arg Gly Lys Lys Val Trp Ile Ser Leu Leu Phe Ala Leu Ala Leu  
1 5 10 15

Ile Phe Thr Met Ala Phe Gly Ser Thr Ser Ser Ala Gln Ala Ala Gly  
20 25 30

Lys Ser Asn Gly Glu Lys Lys Tyr Ile Val Gly Phe Lys Gln Thr Met  
35 40 45

Ser Thr Met Ser Ala Ala Lys Lys Asp Val Ile Ser Glu Lys Gly  
50 55 60

Gly Lys Val Gln Lys Gln Phe Lys Tyr Val Asp Ala Ala Ser Ala Thr  
65 70 75 80

Leu Asn Glu Lys Ala Val Lys Glu Leu Lys Lys Asp Pro Ser Val Ala  
85 90 95

Tyr Val Glu Glu Asp His Val Ala His Ala Tyr Ala Gln Ser Val Pro  
100 105 110

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Tyr Gly Val Ser Gln Ile Lys Ala Pro Ala Leu His Ser Gln Gly Tyr
    115                      120                      125
Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp Ser Gly Ile Asp Ser
    130                      135                      140
Ser His Pro Asp Leu Lys Val Ala Gly Gly Ala Ser Met Val Pro Ser
    145                      150                      155                      160
Glu Thr Xaa Xaa Phe Gln Asp Xaa Asn Ser His Gly Thr His Val Ala
    165                      170                      175
Gly Thr Val Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala
    180                      185                      190
Pro Ser Xaa Xaa Leu Tyr Ala Val Lys Val Leu Gly Xaa Xaa Gly Ser
    195                      200                      205
Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu Trp Ala Ile Ala Asn
    210                      215                      220
Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly Pro Ser Gly Ser Ala
    225                      230                      235                      240
Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala Ser Gly Val Val Val
    245                      250                      255
Val Ala Ala Ala Gly Asn Glu Gly Xaa Xaa Gly Ser Ser Ser Thr Val
    260                      265                      270
Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala Val Gly Ala Val Asp
    275                      280                      285
Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val Gly Pro Glu Leu Asp
    290                      295                      300
Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr Leu Pro Gly Asn Lys
    305                      310                      315                      320
Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser Pro His Val Ala Gly
    325                      330                      335
Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Trp Thr Asn Thr Gln
    340                      345                      350
Val Arg Ser Ser Leu Xaa Asn Thr Thr Thr Lys Leu Gly Asp Ser Phe
    355                      360                      365
Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala Ala Gln
    370                      375                      380

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&lt;210&gt; 3

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Bacillus amyloliquefaciens

&lt;400&gt; 3

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Ala Gln Ser Val Pro Tyr Gly Val Ser Gln Ile Lys Ala Pro Ala Leu
    1                      5                      10                      15
His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp
    20                      25                      30
Ser Gly Ile Asp Ser Ser His Pro Asp Leu Lys Val Ala Gly Gly Ala
    35                      40                      45
Ser Met Val Pro Ser Glu Thr Asn Pro Phe Gln Asp Asn Asn Ser His
    50                      55                      60
Gly Thr His Val Ala Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly
    65                      70                      75                      80

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Val Leu Gly Val Ala Pro Ser Ala Ser Leu Tyr Ala Val Lys Val Leu  
85 90 95

Gly Ala Asp Gly Ser Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu  
100 105 110

Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly  
115 120 125

Pro Ser Gly Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala  
130 135 140

Ser Gly Val Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly  
145 150 155 160

Ser Ser Ser Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala  
165 170 175

Val Gly Ala Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val  
180 185 190

Gly Pro Glu Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr  
195 200 205

Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser  
210 215 220

Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn  
225 230 235 240

Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys  
245 250 255

Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala  
260 265 270

Ala Ala Gln  
275

<210> 4  
<211> 275  
<212> PRT  
<213> Bacillus subtilis

<400> 4  
Ala Gln Ser Val Pro Tyr Gly Ile Ser Gln Ile Lys Ala Pro Ala Leu  
1 5 10 15

His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp  
20 25 30

Ser Gly Ile Asp Ser Ser His Pro Asp Leu Asn Val Arg Gly Gly Ala  
35 40 45

Ser Phe Val Pro Ser Glu Thr Asn Pro Tyr Gln Asp Gly Ser Ser His

50					55					60					
Gly	Thr	His	Val	Ala	Gly	Thr	Ile	Ala	Ala	Leu	Asn	Asn	Ser	Ile	Gly
65					70					75					80
Val	Leu	Gly	Val	Ser	Pro	Ser	Ala	Ser	Leu	Tyr	Ala	Val	Lys	Val	Leu
				85					90					95	
Asp	Ser	Thr	Gly	Ser	Gly	Gln	Tyr	Ser	Trp	Ile	Ile	Asn	Gly	Ile	Glu
			100					105					110		
Trp	Ala	Ile	Ser	Asn	Asn	Met	Asp	Val	Ile	Asn	Met	Ser	Leu	Gly	Gly
		115					120					125			
Pro	Thr	Gly	Ser	Thr	Ala	Leu	Lys	Thr	Val	Val	Asp	Lys	Ala	Val	Ser
		130					135					140			
Ser	Gly	Ile	Val	Val	Ala	Ala	Ala	Ala	Gly	Asn	Glu	Gly	Ser	Ser	Gly
145						150					155				160
Ser	Thr	Ser	Thr	Val	Gly	Tyr	Pro	Ala	Lys	Tyr	Pro	Ser	Thr	Ile	Ala
				165					170					175	
Val	Gly	Ala	Val	Asn	Ser	Ser	Asn	Gln	Arg	Ala	Ser	Phe	Ser	Ser	Ala
			180					185					190		
Gly	Ser	Glu	Leu	Asp	Val	Met	Ala	Pro	Gly	Val	Ser	Ile	Gln	Ser	Thr
		195					200					205			
Leu	Pro	Gly	Gly	Thr	Tyr	Gly	Ala	Tyr	Asn	Gly	Thr	Ser	Met	Ala	Thr
		210				215					220				
Pro	His	Val	Ala	Gly	Ala	Ala	Ala	Leu	Ile	Leu	Ser	Lys	His	Pro	Thr
225						230					235				240
Trp	Thr	Asn	Ala	Gln	Val	Arg	Asp	Arg	Leu	Glu	Ser	Thr	Ala	Thr	Tyr
				245					250					255	
Leu	Gly	Asn	Ser	Phe	Tyr	Tyr	Gly	Lys	Gly	Leu	Ile	Asn	Val	Gln	Ala
			260					265					270		
Ala	Ala	Gln													
		275													

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 <212> PRT  
 <213> Bacillus licheniformis

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 20 25 30



Thr Gly Ile Gln Ala Ser His Pro Asp Leu Asn Val Val Gly Gly Ala  
35 40 45

Ser Phe Val Ala Gly Glu Ala Tyr Asn Thr Asp Gly Asn Gly His Gly  
50 55 60

Thr His Val Ala Gly Thr Val Ala Ala Leu Asp Asn Thr Thr Gly Val  
65 70 75 80

Leu Gly Val Ala Pro Ser Val Ser Leu Tyr Ala Val Lys Val Leu Asn  
85 90 95

Ser Ser Gly Ser Gly Ser Tyr Ser Gly Ile Val Ser Gly Ile Glu Trp  
100 105 110

Ala Thr Thr Asn Gly Met Asp Val Ile Asn Met Ser Leu Gly Gly Ala  
115 120 125

Ser Gly Ser Thr Ala Met Lys Gln Ala Val Asp Asn Ala Tyr Ala Arg  
130 135 140

Gly Val Val Val Val Ala Ala Ala Gly Asn Ser Gly Asn Ser Gly Ser  
145 150 155 160

Thr Asn Thr Ile Gly Tyr Pro Ala Lys Tyr Asp Ser Val Ile Ala Val  
165 170 175

Gly Ala Val Asp Ser Asn Ser Asn Arg Ala Ser Phe Ser Ser Val Gly  
180 185 190

Ala Glu Leu Glu Val Met Ala Pro Gly Ala Gly Val Tyr Ser Thr Tyr  
195 200 205

Pro Thr Asn Thr Tyr Ala Thr Leu Asn Gly Thr Ser Met Ala Ser Pro  
210 215 220

His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Leu  
225 230 235 240

Ser Ala Ser Gln Val Arg Asn Arg Leu Ser Ser Thr Ala Thr Tyr Leu  
245 250 255

Gly Ser Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Glu Ala Ala  
260 265 270

Ala Gln

<210> 6  
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<212> PRT  
<213> Human

<400> 6  
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Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser  
35 40 45

Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr  
50 55 60

His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu  
65 70 75 80

Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala  
85 90 95

Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala  
100 105 110

Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser  
115 120 125

Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly  
130 135 140

Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser  
145 150 155 160

Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln  
165 170 175

Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile  
180 185 190

Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr  
195 200 205

Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala  
210 215 220

Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile  
225 230 235 240

Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu  
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Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg  
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<211> 15

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic

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 1 5 10 15

<210> 8

<211> 15

<212> PRT

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<223> Description of Artificial Sequence: Synthetic

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<210> 9

<211> 15

<212> PRT

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<223> Description of Artificial Sequence: Synthetic

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Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala  
 1 5 10 15

<210> 10

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

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Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn  
 1 5 10 15

<210> 11

<211> 15

<212> PRT

<213> Artificial Sequence

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<400> 11

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 1 5 10 15

<210> 12  
 <211> 15  
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 <223> Description of Artificial Sequence: Synthetic

<400> 12  
 Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser  
 1 5 10 15

<210> 13  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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<400> 13  
 Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys  
 1 5 10 15

<210> 14  
 <211> 15  
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<220>  
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<400> 14  
 Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val  
 1 5 10 15

<210> 15  
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<220>  
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<400> 15  
 Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr  
 1 5 10 15

<210> 16  
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<220>

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<400> 16

Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser  
1 5 10 15

<210> 17

<211> 15

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic

<400> 17

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<210> 18

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<212> PRT

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<223> Description of Artificial Sequence: Synthetic

<400> 18

Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn  
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<210> 19

<211> 15

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic

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<210> 20

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 20

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 1 5 10 15

<210> 21  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 21  
 Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro  
 1 5 10 15

<210> 22  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 22  
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 1 5 10 15

<210> 23  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 23  
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 1 5 10 15

<210> 24  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 24  
 Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn  
 1 5 10 15

<210> 25

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 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 25  
 Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly  
 1 5 10 15

<210> 26  
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<220>  
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<400> 26  
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 1 5 10 15

<210> 27  
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<400> 27  
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 1 5 10 15

<210> 28  
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<400> 28  
 Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala  
 1 5 10 15

<210> 29  
 <211> 15  
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<223> Description of Artificial Sequence: Synthetic

<400> 29

Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn  
 1 5 10 15

<210> 30

<211> 15

<212> PRT

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<223> Description of Artificial Sequence: Synthetic

<400> 30

Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly  
 1 5 10 15

<210> 31

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 31

Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly  
 1 5 10 15

<210> 32

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 32

Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro  
 1 5 10 15

<210> 33

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 33

Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu  
 1 5 10 15



<210> 34  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 34  
 Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala  
 1 5 10 15

<210> 35  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 35  
 Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val  
 1 5 10 15

<210> 36  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 36  
 Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala  
 1 5 10 15

<210> 37  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 37  
 Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser  
 1 5 10 15

<210> 38  
 <211> 15  
 <212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 38

Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val  
1 5 10 15

<210> 39

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 39

Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile  
1 5 10 15

<210> 40

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 40

Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly  
1 5 10 15

<210> 41

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 41

Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp  
1 5 10 15

<210> 42

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 42

Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn  
1 5 10 15

<210> 43

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 43

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met  
1 5 10 15

<210> 44

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 44

Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala  
1 5 10 15

<210> 45

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 45

Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser  
1 5 10 15

<210> 46

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 46

Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser  
1 5 10 15

<210> 47  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 47  
 Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro  
 1 5 10 15

<210> 48  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 48  
 His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr  
 1 5 10 15

<210> 49  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 49  
 Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln  
 1 5 10 15

<210> 50  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 50  
 Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn  
 1 5 10 15

<210> 51  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 51

Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr  
1 5 10 15

<210> 52

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 52

Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly  
1 5 10 15

<210> 53

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 53

Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val  
1 5 10 15

<210> 54

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 54

Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala  
1 5 10 15

<210> 55

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 55

Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn

1 5 10 15

<210> 56  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 56  
 Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala  
 1 5 10 15

<210> 57  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 57  
 Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile  
 1 5 10 15

<210> 58  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 58  
 Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro  
 1 5 10 15

<210> 59  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 59  
 Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr  
 1 5 10 15

<210> 60  
 <211> 15

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 60  
Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala  
1 5 10 15

<210> 61  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 61  
Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 62  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 62  
Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr  
1 5 10 15

<210> 63  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 63  
Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn  
1 5 10 15

<210> 64  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 64  
 Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg  
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<210> 65  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 65  
 Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe  
     1                    5                    10                    15

<210> 66  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 66  
 Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr  
     1                    5                    10                    15

<210> 67  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 67  
 Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly  
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<210> 68  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 68  
 Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile  
     1                    5                    10                    15



<210> 69  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 69  
 Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro  
 1 5 10 15

<210> 70  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 70  
 Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn  
 1 5 10 15

<210> 71  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 71  
 Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser  
 1 5 10 15

<210> 72  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 72  
 Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro  
 1 5 10 15

<210> 73  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 73

Val	Ala	Pro	Gly	Val	Asn	Val	Gln	Ser	Thr	Tyr	Pro	Gly	Ser	Thr
1				5					10					15

<210> 74

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 74

Gly	Val	Asn	Val	Gln	Ser	Thr	Tyr	Pro	Gly	Ser	Thr	Tyr	Ala	Ser
1				5					10					15

<210> 75

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 75

Val	Gln	Ser	Thr	Tyr	Pro	Gly	Ser	Thr	Tyr	Ala	Ser	Leu	Asn	Gly
1				5					10					15

<210> 76

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 76

Thr	Tyr	Pro	Gly	Ser	Thr	Tyr	Ala	Ser	Leu	Asn	Gly	Thr	Ser	Met
1				5					10					15

<210> 77

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 77

Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro  
 1 5 10 15

<210> 78  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 78  
 Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala  
 1 5 10 15

<210> 79  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 79  
 Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala  
 1 5 10 15

<210> 80  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 80  
 Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val  
 1 5 10 15

<210> 81  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 81  
 Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys  
 1 5 10 15

<210> 82

<211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 82  
 Gly Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser  
 1 5 10 15

<210> 83  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 83  
 Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn  
 1 5 10 15

<210> 84  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 84  
 Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile  
 1 5 10 15

<210> 85  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 85  
 Lys Gln Lys Asn Pro Ser Trp Ser Val Asn Gln Ile Arg Asn His  
 1 5 10 15

<210> 86  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 86

Asn Pro Ser Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn  
1 5 10 15

<210> 87

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 87

Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr  
1 5 10 15

<210> 88

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 88

Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly  
1 5 10 15

<210> 89

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 89

Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn  
1 5 10 15

<210> 90

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 90

Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr Gly  
1 5 10 15

<210> 91  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 91  
 Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu  
 1 5 10 15

<210> 92  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 92  
 Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala  
 1 5 10 15

<210> 93  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 93  
 Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala  
 1 5 10 15

<210> 94  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 94  
 Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg  
 1 5 10 15

<210> 95  
 <211> 15  
 <212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 95

Asp	Ala	Glu	Leu	His	Ile	Phe	Arg	Val	Phe	Thr	Asn	Asn	Gln	Val
1				5					10					15

<210> 96

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 96

Pro	Leu	Arg	Arg	Ala	Ser	Leu	Ser	Leu	Gly	Ser	Gly	Phe	Trp	His
1				5					10					15

<210> 97

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 97

Arg	Ala	Ser	Leu	Ser	Leu	Gly	Ser	Gly	Phe	Trp	His	Ala	Thr	Gly
1				5					10					15

<210> 98

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 98

Leu	Ser	Leu	Gly	Ser	Gly	Phe	Trp	His	Ala	Thr	Gly	Arg	His	Ser
1				5					10					15

<210> 99

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 99

Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg  
 1 5 10 15

<210> 100

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 100

Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg  
 1 5 10 15

<210> 101

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 101

Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro  
 1 5 10 15

<210> 102

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 102

Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val  
 1 5 10 15

<210> 103

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 103

Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr  
 1 5 10 15



<210> 104  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 104  
 Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala  
 1 5 10 15

<210> 105  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 105  
 Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu  
 1 5 10 15

<210> 106  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 106  
 Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met  
 1 5 10 15

<210> 107  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 107  
 Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr  
 1 5 10 15

<210> 108  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 108

Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn  
 1 5 10 15

<210> 109

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 109

Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val  
 1 5 10 15

<210> 110

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 110

Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe  
 1 5 10 15

<210> 111

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 111

Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly  
 1 5 10 15

<210> 112

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 112

Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu

1 5 10 15

<210> 113  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 113  
 Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro  
 1 5 10 15

<210> 114  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 114  
 Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys  
 1 5 10 15

<210> 115  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 115  
 Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys  
 1 5 10 15

<210> 116  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 116  
 Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr  
 1 5 10 15

<210> 117  
 <211> 15

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 117  
Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr  
1 5 10 15

<210> 118  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 118  
His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg  
1 5 10 15

<210> 119  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 119  
Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp  
1 5 10 15

<210> 120  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 120  
Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu  
1 5 10 15

<210> 121  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 121  
 Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly  
     1                    5                    10                    15

<210> 122  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 122  
 Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val  
     1                    5                    10                    15

<210> 123  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 123  
 Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val  
     1                    5                    10                    15

<210> 124  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 124  
 Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser  
     1                    5                    10                    15

<210> 125  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 125  
 Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu  
     1                    5                    10                    15

<210> 126  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 126  
 Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly  
 1 5 10 15

<210> 127  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 127  
 Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro  
 1 5 10 15

<210> 128  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 128  
 Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu  
 1 5 10 15

<210> 129  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 129  
 Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile  
 1 5 10 15

<210> 130  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 130

Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val  
1 5 10 15

<210> 131

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 131

Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn  
1 5 10 15

<210> 132

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 132

Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val  
1 5 10 15

<210> 133

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 133

Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr  
1 5 10 15

<210> 134

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 134

Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe  
 1 5 10 15

<210> 135

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 135

Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala  
 1 5 10 15

<210> 136

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 136

Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr  
 1 5 10 15

<210> 137

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 137

Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu  
 1 5 10 15

<210> 138

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 138

Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile  
 1 5 10 15

<210> 139



<211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 139  
 Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu  
 1 5 10 15

<210> 140  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 140  
 Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser  
 1 5 10 15

<210> 141  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 141  
 Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly  
 1 5 10 15

<210> 142  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 142  
 Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe  
 1 5 10 15

<210> 143  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 143

Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His  
1 5 10 15

<210> 144

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 144

Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val  
1 5 10 15

<210> 145

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 145

Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val  
1 5 10 15

<210> 146

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 146

Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu  
1 5 10 15

<210> 147

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 147

Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn  
1 5 10 15

<210> 148  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 148  
 Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile  
 1 5 10 15

<210> 149  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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<400> 149  
 Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser  
 1 5 10 15

<210> 150  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 150  
 Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly  
 1 5 10 15

<210> 151  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 151  
 Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly  
 1 5 10 15

<210> 152  
 <211> 15  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 152

Asn	Val	Ile	Met	Val	Ser	Ala	Ile	Gly	Asn	Asp	Gly	Pro	Leu	Tyr
1				5				10					15	

<210> 153

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 153

Met	Val	Ser	Ala	Ile	Gly	Asn	Asp	Gly	Pro	Leu	Tyr	Gly	Thr	Ile
1				5				10					15	

<210> 154

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 154

Ala	Ile	Gly	Asn	Asp	Gly	Pro	Leu	Tyr	Gly	Thr	Leu	Asn	Asn	Pro
1				5				10					15	

<210> 155

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 155

Asn	Asp	Gly	Pro	Leu	Tyr	Gly	Thr	Leu	Asn	Asn	Pro	Ala	Asp	Gln
1				5				10					15	

<210> 156

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 156  
 Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val  
           1                  5                  10                  15

<210> 157  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 157  
 Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val  
           1                  5                  10                  15

<210> 158  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 158  
 Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile  
           1                  5                  10                  15

<210> 159  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 159  
 Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu  
           1                  5                  10                  15

<210> 160  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 160  
 Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile  
           1                  5                  10                  15

<210> 161  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 161  
 Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe  
 1 5 10 15

<210> 162  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 162  
 Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg  
 1 5 10 15

<210> 163  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 163  
 Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr  
 1 5 10 15

<210> 164  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 164  
 Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu  
 1 5 10 15

<210> 165  
 <211> 15  
 <212> PRT  
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<220>

<223> Description of Artificial Sequence: Synthetic

<400> 165

Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly  
1 5 10 15

<210> 166

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 166

Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr Gly  
1 5 10 15

<210> 167

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 167

Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys  
1 5 10 15

<210> 168

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 168

Thr Trp Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile  
1 5 10 15

<210> 169

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 169

Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr

1 5 10 15

<210> 170  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 170  
 Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly  
 1 5 10 15

<210> 171  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 171  
 Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly  
 1 5 10 15

<210> 172  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 172  
 Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val  
 1 5 10 15

<210> 173  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 173  
 Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly  
 1 5 10 15

<210> 174  
 <211> 15



<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 174  
Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala  
1 5 10 15

<210> 175  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 175  
Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly  
1 5 10 15

<210> 176  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 176  
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val  
1 5 10 15

<210> 177  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 177  
Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro  
1 5 10 15

<210> 178  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 178  
 Cys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala  
     1                    5                    10                    15

<210> 179  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 179  
 Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val  
     1                    5                    10                    15

<210> 180  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 180  
 Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu  
     1                    5                    10                    15

<210> 181  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 181  
 Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr  
     1                    5                    10                    15

<210> 182  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 182  
 Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys  
     1                    5                    10                    15

<210> 183  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 183  
 Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu  
 1 5 10 15

<210> 184  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 184  
 Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro  
 1 5 10 15

<210> 185  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 185  
 Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met  
 1 5 10 15

<210> 186  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 186  
 Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala  
 1 5 10 15

<210> 187  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 187

Arg	Glu	Leu	Val	Asn	Pro	Ala	Ser	Met	Lys	Gln	Ala	Leu	Ile	Ala
1				5					10					15

<210> 188

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 188

Val	Asn	Pro	Ala	Ser	Met	Lys	Gln	Ala	Leu	Ile	Ala	Ser	Ala	Arg
1				5					10					15

<210> 189

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 189

Ala	Ser	Met	Lys	Gln	Ala	Leu	Ile	Ala	Ser	Ala	Arg	Arg	Leu	Pro
1				5					10					15

<210> 190

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 190

Lys	Gln	Ala	Leu	Ile	Ala	Ser	Ala	Arg	Arg	Leu	Pro	Gly	Val	Asn
1				5					10					15

<210> 191

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 191

Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu  
 1 5 10 15

<210> 192  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 192  
 Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His  
 1 5 10 15

<210> 193  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 193  
 Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu  
 1 5 10 15

<210> 194  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 194  
 Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu  
 1 5 10 15

<210> 195  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 195  
 Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr  
 1 5 10 15

<210> 196

<211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 196  
 Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu  
 1 5 10 15

<210> 197  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 197  
 Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr  
 1 5 10 15

<210> 198  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 198  
 Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln  
 1 5 10 15

<210> 199  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 199  
 Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu  
 1 5 10 15

<210> 200  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 200

Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser  
1 5 10 15

<210> 201

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 201

Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp  
1 5 10 15

<210> 202

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 202

Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu  
1 5 10 15

<210> 203

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 203

Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr  
1 5 10 15

<210> 204

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 204

Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro  
1 5 10 15

<210> 205  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 205  
 Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser  
 1 5 10 15

<210> 206  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 206  
 Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile  
 1 5 10 15

<210> 207  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 207  
 Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly  
 1 5 10 15

<210> 208  
 <211> 1052  
 <212> PRT  
 <213> Homo sapiens

<400> 208  
 Met Lys Leu Val Asn Ile Trp Leu Leu Leu Val Val Leu Leu Cys  
 1 5 10 15

Gly Lys Lys His Leu Gly Asp Arg Leu Glu Lys Lys Ser Phe Glu Lys  
 20 25 30

Ala Pro Cys Pro Gly Cys Ser His Leu Thr Leu Lys Val Glu Phe Ser  
 35 40 45

Ser Thr Val Val Glu Tyr Glu Tyr Ile Val Ala Phe Asn Gly Tyr Phe



50	55	60
Thr Ala Lys Ala Arg Asn Ser Phe Ile Ser Ser Ala Leu Lys Ser Ser 65 70 75 80		
Glu Val Asp Asn Trp Arg Ile Ile Pro Arg Asn Asn Pro Ser Ser Asp 85 90 95		
Tyr Pro Ser Asp Phe Glu Val Ile Gln Ile Lys Glu Lys Gln Lys Ala 100 105 110		
Gly Leu Leu Thr Leu Glu Asp His Pro Asn Ile Lys Arg Val Thr Pro 115 120 125		
Gln Arg Lys Val Phe Arg Ser Leu Lys Tyr Ala Glu Ser Asp Pro Thr 130 135 140		
Val Pro Cys Asn Glu Thr Arg Trp Ser Gln Lys Trp Gln Ser Ser Arg 145 150 155 160		
Pro Leu Arg Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His Ala 165 170 175		
Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln 180 185 190		
Val Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr 195 200 205		
Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu Lys 210 215 220		
His Pro His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu 225 230 235 240		
Arg Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val 245 250 255		
Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu 260 265 270		
His Ile Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp 275 280 285		
Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu 290 295 300		
Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val Asp 305 310 315 320		
Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile 325 330 335		
Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln 340 345 350		
Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala		

355	360	365
Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr		
370	375	380
Gly Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly		
385	390	395
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala		
405	410	415
Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln		
420	425	430
Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala		
435	440	445
Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly		
450	455	460
Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro		
465	470	475
Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr		
485	490	495
Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly Gly Met Pro Thr		
500	505	510
Val Val Asn Val Thr Ile Leu Asn Gly Met Gly Val Thr Gly Arg Ile		
515	520	525
Val Asp Lys Pro Asp Trp Gln Pro Tyr Leu Pro Gln Asn Gly Asp Asn		
530	535	540
Ile Glu Val Ala Phe Ser Tyr Ser Ser Val Leu Trp Pro Trp Ser Gly		
545	550	555
Tyr Leu Ala Ile Ser Ile Ser Val Thr Lys Lys Ala Ala Ser Trp Glu		
565	570	575
Gly Ile Ala Gln Gly His Val Met Ile Thr Val Ala Ser Pro Ala Glu		
580	585	590
Thr Glu Ser Lys Asn Gly Ala Glu Gln Thr Ser Thr Val Lys Leu Pro		
595	600	605
Ile Lys Val Lys Ile Ile Pro Thr Pro Pro Arg Ser Lys Arg Val Leu		
610	615	620
Trp Asp Gln Tyr His Asn Leu Arg Tyr Pro Pro Gly Tyr Phe Pro Arg		
625	630	635
Asp Asn Leu Arg Met Lys Asn Asp Pro Leu Asp Trp Asn Gly Asp His		
645	650	655
Ile His Thr Asn Phe Arg Asp Met Tyr Gln His Leu Arg Ser Met Gly		

660					665					670						
Tyr	Phe	Val	Glu	Val	Leu	Gly	Ala	Pro	Phe	Thr	Cys	Phe	Asp	Ala	Ser	
675					680					685						
Gln	Tyr	Gly	Thr	Leu	Leu	Met	Val	Asp	Ser	Glu	Glu	Glu	Tyr	Phe	Pro	
690					695					700						
Glu	Glu	Ile	Ala	Lys	Leu	Arg	Arg	Asp	Val	Asp	Asn	Gly	Leu	Ser	Leu	
705					710					715					720	
Val	Ile	Phe	Ser	Asp	Trp	Tyr	Asn	Thr	Ser	Val	Met	Arg	Lys	Val	Lys	
725					730					735						
Phe	Tyr	Asp	Glu	Asn	Thr	Arg	Gln	Trp	Trp	Met	Pro	Asp	Thr	Gly	Gly	
740					745					750						
Ala	Asn	Ile	Pro	Ala	Leu	Asn	Glu	Leu	Leu	Ser	Val	Trp	Asn	Met	Gly	
755					760					765						
Phe	Ser	Asp	Gly	Leu	Tyr	Glu	Gly	Glu	Phe	Thr	Leu	Ala	Asn	His	Asp	
770					775					780						
Met	Tyr	Tyr	Ala	Ser	Gly	Cys	Ser	Ile	Ala	Lys	Phe	Pro	Glu	Asp	Gly	
785					790					795					800	
Val	Val	Ile	Thr	Gln	Thr	Phe	Lys	Asp	Gln	Gly	Leu	Glu	Val	Leu	Lys	
805					810					815						
Gln	Glu	Thr	Ala	Val	Val	Glu	Asn	Val	Pro	Ile	Leu	Gly	Leu	Tyr	Gln	
820					825					830						
Ile	Pro	Ala	Glu	Gly	Gly	Gly	Arg	Ile	Val	Leu	Tyr	Gly	Asp	Ser	Asn	
835					840					845						
Cys	Leu	Asp	Asp	Ser	His	Arg	Gln	Lys	Asp	Cys	Phe	Trp	Leu	Leu	Asp	
850					855					860						
Ala	Leu	Leu	Gln	Tyr	Thr	Ser	Tyr	Gly	Val	Thr	Pro	Pro	Ser	Leu	Ser	
865					870					875					880	
His	Ser	Gly	Asn	Arg	Gln	Arg	Pro	Pro	Ser	Gly	Ala	Gly	Ser	Val	Thr	
885					890					895						
Pro	Glu	Arg	Met	Glu	Gly	Asn	His	Leu	His	Arg	Tyr	Ser	Lys	Val	Leu	
900					905					910						
Glu	Ala	His	Leu	Gly	Asp	Pro	Lys	Pro	Arg	Pro	Leu	Pro	Ala	Cys	Pro	
915					920					925						
Arg	Leu	Ser	Trp	Ala	Lys	Pro	Gln	Pro	Leu	Asn	Glu	Thr	Ala	Pro	Ser	
930					935					940						
Asn	Leu	Trp	Lys	His	Gln	Lys	Leu	Leu	Ser	Ile	Asp	Leu	Asp	Lys	Val	
945					950					955					960	
Val	Leu	Pro	Asn	Phe	Arg	Ser	Asn	Arg	Pro	Gln	Val	Arg	Pro	Leu	Ser	

965	970	975
Pro Gly Glu Ser Gly Ala Trp Asp Ile	Pro Gly Gly Ile Met	Pro Gly
980	985	990
Arg Tyr Asn Gln Glu Val Gly Gln Thr Ile	Pro Val Phe Ala Phe Leu	
995	1000	1005
Gly Ala Met Val Val Leu Ala Phe Phe Val Val Gln Ile	Asn Lys Ala	
1010	1015	1020
Lys Ser Arg Pro Lys Arg Arg Lys Pro Arg Val Lys Arg Pro Gln Leu		
1025	1030	1035
Met Gln Gln Val His Pro Pro Lys Thr Pro Ser Val		
1045	1050	

<210> 209  
 <211> 280  
 <212> PRT  
 <213> Homo sapiens

<400> 209

Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu	
1 5 10 15	
Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp	
20 25 30	
Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg	
35 40 45	
Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly	
50 55 60	
Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe	
65 70 75 80	
Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln	
85 90 95	
Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu	
100 105 110	
Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met	
115 120 125	
Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val	
130 135 140	
Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu	
145 150 155 160	
Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp	
165 170 175	

Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp  
180 185 190

Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr  
195 200 205

Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu  
210 215 220

Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu  
225 230 235 240

Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met  
245 250 255

Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met  
260 265 270

Phe Glu Gln Gly His Gly Lys Leu  
275 280

<210> 210

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 210

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 211

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 211

Ala Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 212

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 212

Gly Ala Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 213  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 213  
 Gly Ser Ala Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 214  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 214  
 Gly Ser Ile Ala Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 215  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 215  
 Gly Ser Ile Ser Ala Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 216  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 216  
 Gly Ser Ile Ser Tyr Ala Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 217

<211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 217  
 Gly Ser Ile Ser Tyr Pro Ala Ala Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 218  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 218  
 Gly Ser Ile Ser Tyr Pro Ala Arg Ala Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 219  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 219  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Ala Ala Met Ala Val  
 1 5 10 15

<210> 220  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 220  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Ala Ala Val  
 1 5 10 15

<210> 221  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 221

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Ala  
1 5 10 15

<210> 222

<211> 15

<212> PRT

<213> Humicola insolens

<400> 222

Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln Thr Pro Trp Ala  
1 5 10 15

<210> 223

<211> 15

<212> PRT

<213> Humicola insolens

<400> 223

Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro Val Phe Ser  
1 5 10 15

<210> 224

<211> 276

<212> PRT

<213> Humicola insolens

<400> 224

Met Arg Ser Ser Pro Leu Leu Pro Ser Ala Val Val Ala Ala Leu Pro  
1 5 10 15

Val Leu Ala Leu Ala Ala Asp Gly Arg Ser Thr Arg Tyr Trp Asp Cys  
20 25 30

Cys Lys Pro Ser Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro  
35 40 45

Val Phe Ser Cys Asn Ala Asn Phe Gln Arg Ile Thr Asp Phe Asp Ala  
50 55 60

Lys Ser Gly Cys Glu Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln  
65 70 75 80

Thr Pro Trp Ala Val Asn Asp Asp Phe Ala Leu Gly Phe Ala Ala Thr  
85 90 95

Ser Ile Ala Gly Ser Asn Glu Ala Gly Trp Cys Cys Ala Cys Tyr Glu  
100 105 110

Leu Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Lys Met Val Val Gln  
115 120 125



Ser Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn His Phe Asp Leu Asn  
130 135 140

Ile Pro Gly Gly Gly Val Gly Ile Phe Asp Gly Cys Thr Pro Gln Phe  
145 150 155 160

Gly Gly Leu Pro Gly Gln Arg Tyr Gly Gly Ile Ser Ser Arg Asn Glu  
165 170 175

Cys Asp Arg Phe Pro Asp Ala Leu Lys Pro Gly Cys Tyr Trp Arg Phe  
180 185 190

Asp Trp Phe Lys Asn Ala Asp Asn Pro Ser Phe Ser Phe Arg Gln Val  
195 200 205

Gln Cys Pro Ala Glu Leu Val Ala Arg Thr Gly Cys Arg Arg Asn Asp  
210 215 220

Asp Gly Asn Phe Pro Ala Val Gln Ile Pro Ser Ser Ser Thr Ser Ser  
225 230 235 240

Pro Val Asn Gln Pro Thr Ser Thr Ser Thr Thr Ser Thr Ser Thr Thr  
245 250 255

Ser Ser Pro Pro Val Gln Pro Thr Thr Pro Ser Gly Cys Thr Ala Glu  
260 265 270

Arg Trp Ala Gln  
275

<210> 225  
<211> 18  
<212> PRT  
<213> Thermomyces lanuginosus

<400> 225  
Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys Leu Ile  
1 5 10 15

Val Leu

<210> 226  
<211> 15  
<212> PRT  
<213> Thermomyces lanuginosus

<400> 226  
Ser Ile Glu Asn Trp Ile Gly Asn Leu Asn Phe Asp Leu Lys Glu  
1 5 10 15

<210> 227  
<211> 291  
<212> PRT

&lt;213&gt; Thermomyces lanuginosus

&lt;400&gt; 227

Met Arg Ser Ser Leu Val Leu Phe Phe Val Ser Ala Trp Thr Ala Leu  
 1 5 10 15

Ala Ser Pro Ile Arg Arg Glu Val Ser Gln Asp Leu Phe Asn Gln Phe  
 20 25 30

Asn Leu Phe Ala Gln Tyr Ser Ala Ala Ala Tyr Cys Gly Lys Asn Asn  
 35 40 45

Asp Ala Pro Ala Gly Thr Asn Ile Thr Cys Thr Gly Asn Ala Cys Pro  
 50 55 60

Glu Val Glu Lys Ala Asp Ala Thr Phe Leu Tyr Ser Phe Glu Asp Ser  
 65 70 75 80

Gly Val Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys  
 85 90 95

Leu Ile Val Leu Ser Phe Arg Gly Ser Arg Ser Ile Glu Asn Trp Ile  
 100 105 110

Gly Asn Leu Asn Phe Asp Leu Lys Glu Ile Asn Asp Ile Cys Ser Gly  
 115 120 125

Cys Arg Gly His Asp Gly Phe Thr Ser Ser Trp Arg Ser Val Ala Asp  
 130 135 140

Thr Leu Arg Gln Lys Val Glu Asp Ala Val Arg Glu His Pro Asp Tyr  
 145 150 155 160

Arg Val Val Phe Thr Gly His Ser Leu Gly Gly Ala Leu Ala Thr Val  
 165 170 175

Ala Gly Ala Asp Leu Arg Gly Asn Gly Tyr Asp Ile Asp Val Phe Ser  
 180 185 190

Tyr Gly Ala Pro Arg Val Gly Asn Arg Ala Phe Ala Glu Phe Leu Thr  
 195 200 205

Val Gln Thr Gly Gly Thr Leu Tyr Arg Ile Thr His Thr Asn Asp Ile  
 210 215 220

Val Pro Arg Leu Pro Pro Arg Glu Phe Gly Tyr Ser His Ser Ser Pro  
 225 230 235 240

Glu Tyr Trp Ile Lys Ser Gly Thr Leu Val Pro Val Thr Arg Asn Asp  
 245 250 255

Ile Val Lys Ile Glu Gly Ile Asp Ala Thr Gly Gly Asn Asn Gln Pro  
 260 265 270

Asn Ile Pro Asp Ile Pro Ala His Leu Trp Tyr Phe Gly Leu Ile Gly  
 275 280 285

Thr Cys Leu  
290

<210> 228  
<211> 15  
<212> PRT  
<213> Streptomyces plicatus

<400> 228  
Ile Lys Val Leu Leu Ser Val Leu Gly Asn His Gln Gly Ala Gly  
1 5 10 15

<210> 229  
<211> 313  
<212> PRT  
<213> Streptomyces plicatus

<400> 229  
Met Phe Thr Pro Val Arg Arg Arg Val Arg Thr Ala Ala Leu Ala Leu  
1 5 10 15

Ser Ala Ala Ala Ala Leu Val Leu Gly Ser Thr Ala Ala Ser Gly Ala  
20 25 30

Ser Ala Thr Pro Ser Pro Ala Pro Ala Pro Ala Pro Val Lys  
35 40 45

Gln Gly Pro Thr Ser Val Ala Tyr Val Glu Val Asn Asn Asn Ser Met  
50 55 60

Leu Asn Val Gly Lys Tyr Thr Leu Ala Asp Gly Gly Gly Asn Ala Phe  
65 70 75 80

Asp Val Ala Val Ile Phe Ala Ala Asn Ile Asn Tyr Asp Thr Gly Thr  
85 90 95

Lys Thr Ala Tyr Leu His Phe Asn Glu Asn Val Gln Arg Val Leu Asp  
100 105 110

Asn Ala Val Thr Gln Ile Arg Pro Leu Gln Gln Gln Gly Ile Lys Val  
115 120 125

Leu Leu Ser Val Leu Gly Asn His Gln Gly Ala Gly Phe Ala Asn Phe  
130 135 140

Pro Ser Gln Gln Ala Ala Ser Ala Phe Ala Lys Gln Leu Ser Asp Ala  
145 150 155 160

Val Ala Lys Tyr Gly Leu Asp Gly Val Asp Phe Asp Asp Glu Tyr Ala  
165 170 175

Glu Tyr Gly Asn Asn Gly Thr Ala Gln Pro Asn Asp Ser Ser Phe Val  
180 185 190

His Leu Val Thr Ala Leu Arg Ala Asn Met Pro Asp Lys Ile Ile Ser

195	200	205
Leu Tyr Asn Ile Gly Pro Ala Ala Ser Arg Leu Ser Tyr Gly Gly Val		
210	215	220
Asp Val Ser Asp Lys Phe Asp Tyr Ala Trp Asn Pro Tyr Tyr Gly Thr		
225	230	235 240
Trp Gln Val Pro Gly Ile Ala Leu Pro Lys Ala Gln Leu Ser Pro Ala		
	245	250 255
Ala Val Glu Ile Gly Arg Thr Ser Arg Ser Thr Val Ala Asp Leu Ala		
	260	265 270
Arg Arg Thr Val Asp Glu Gly Tyr Gly Val Tyr Leu Thr Tyr Asn Leu		
	275	280 285
Asp Gly Gly Asp Arg Thr Ala Asp Val Ser Ala Phe Thr Arg Glu Leu		
	290	295 300
Tyr Gly Ser Glu Ala Val Arg Thr Pro		
305	310	

<210> 230  
 <211> 15  
 <212> PRT  
 <213> Bacillus amyloliquefaciens

<400> 230  
 Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val  
 1 5 10 15

<210> 231  
 <211> 15  
 <212> PRT  
 <213> Bacillus amyloliquefaciens

<400> 231  
 Asn Gly Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn  
 1 5 10 15

<210> 232  
 <211> 15  
 <212> PRT  
 <213> Bacillus lentus

<400> 232  
 Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser  
 1 5 10 15

<210> 233  
 <211> 15  
 <212> PRT

<213> Bacillus lentus

<400> 233

Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser  
1 5 10 15

<210> 234

<211> 17

<212> PRT

<213> Bacillus lentus

<400> 234

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly  
1 5 10 15

Ala

<210> 235

<211> 15

<212> PRT

<213> Bacillus lentus

<400> 235

Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser  
1 5 10 15

<210> 236

<211> 272

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Hybrid of  
Bacillus lentus and Bacillus amyloliquefaciens

<400> 236

Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala  
1 5 10 15

His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp  
20 25 30

Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser  
35 40 45

Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr  
50 55 60

His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu  
65 70 75 80

Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala  
85 90 95

Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala		
100	105	110
Gly Asn Asn Gly Met His Val Ile Asn Met Ser Leu Gly Gly Ser Gly		
115	120	125
Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala Ser Gly Val		
130	135	140
Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly Ser Ser Ser		
145	150	155 160
Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala Val Gly Ala		
165	170	175
Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val Gly Pro Glu		
180	185	190
Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr Leu Pro Gly		
195	200	205
Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser Pro His Val		
210	215	220
Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Trp Thr Asn		
225	230	235 240
Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys Leu Gly Asp		
245	250	255
Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala Ala Gln		
260	265	270